

CLAIMS

1. A thin-walled lightweight cooled turbine blade comprising a front blade portion (10a) constituting a front portion of the blade (10), a rear blade portion (10b) constituting a rear portion of the blade, and a middle blade portion (10c) located between the front blade portion and the rear blade portion and constituting an intermediate portion of the blade (10),
- 10 the front blade portion (10a) comprised of front cooling air passages (12a) that introduced cooling air into the interior thereof and front film cooling holes (7a) for blowing out the cooling air from the front cooling air passages (12a) to back and belly sides of the blade,
- 15 the middle blade portion (10c) being a solid structure, the belly side of the middle blade portion (10c) forms a recess portion towards the back side thereof, and
- high-temperature gas flowing on the belly side of the blade branches once into two flows to the rear edge portion and along the belly side, and these branched high-temperature gas flows are merged again at the rear edge portion, thereby forming a separation region (s).
- 20 2. The thin-walled lightweight cooled turbine blade specified in Claim 1, wherein
- 25 the rear blade portion (10b) comprises in the interior thereof rear cooling air passages (12b) and rear film

cooling holes (7b) for blowing out the cooling air from the rear cooling air passages (12b) to the back and belly sides of the blade.

3. The thin-walled lightweight cooled turbine blade
5 specified in Claim 1, wherein

the middle blade portion (10c) and the rear blade portion (10b) comprise communication holes (8) communicating between the belly side and the back side of the blade which supplying a part of the cooling air from the belly side to
10 the back side thereof.

4. The thin-walled lightweight cooled turbine blade specified in Claim 2, wherein

the middle blade portion (10c) comprises communication holes (8) for supplying part of the cooling air blown out
15 from the front film cooling holes (7a), from the belly side of the blade (10) to the back side thereof.